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Afternoon Sun, Lake Superior, by Lawren S. Harris

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CANADIAN GEOGRAPHICAL JOURNAL

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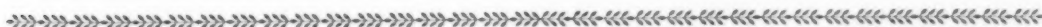
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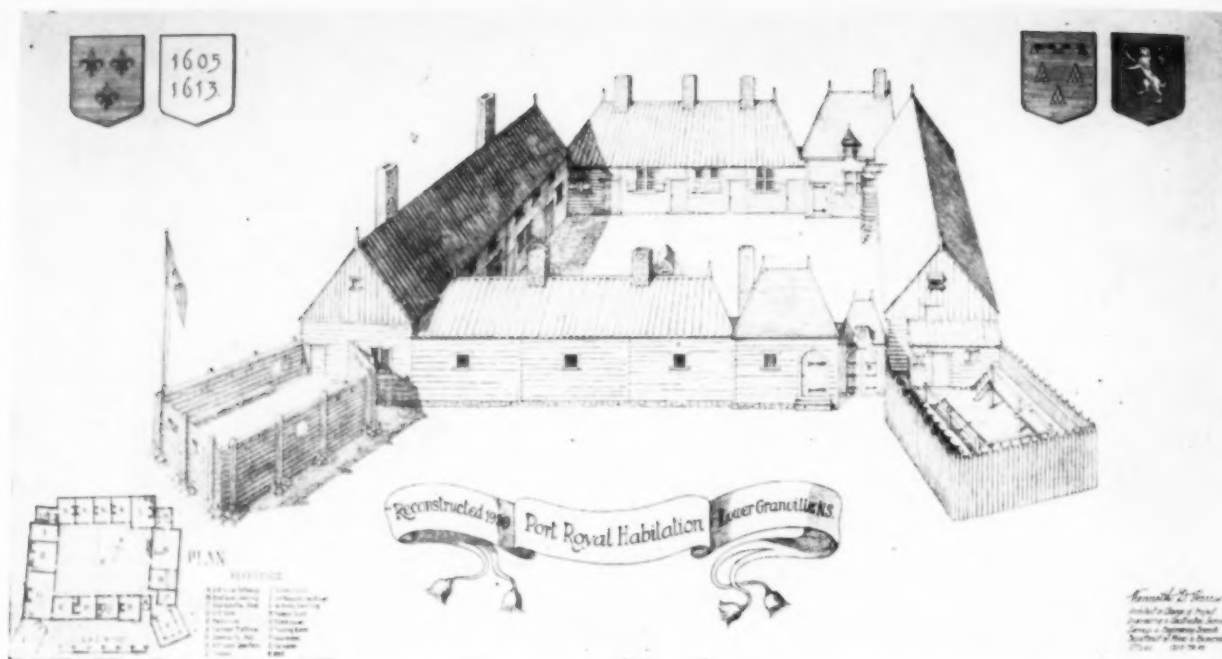


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An Introduction to Canadian Architecture

by WALTER ABELL

IMAGINE A RIVULET emerging from a clear spring high in the mountains. It gathers force as it descends. By the time it reaches the lower foothills it is a broad stream, growing sedate, but still invigorated by the slopes behind it. Later, joined by other streams in the valley, it becomes a great river, but at the same time suffers pollution from the waste of industrial centres along its banks. Finally it approaches the sea, drops its sediment in a delta zone, and emerges, once more purified, as a current in the ocean.

In such a river system, you have a reasonably accurate image of the four main stages through which Canadian architecture has passed up to the present time. Its first colonial phase was functional building of the purest type, tracing its lineage to the lofty architectural traditions of the middle ages—those same traditions which had produced

the stalwart feudal castles and great Gothic cathedrals of Europe.

During the latter part of the colonial epoch, mediaeval influences gave way to those of the renaissance. Canadian architecture entered its second period, the English phase which is known as Georgian. Elegant and stately, it nevertheless began to show symptoms of decline in its growing dependence upon the architectural forms of the past.

Then came the late nineteenth and early twentieth centuries, which, for want of a better term, we may call the Victorian period. This was Canada's epoch of expansion, during which the larger part of her existing architecture was built. Unfortunately, throughout the western world it was also a period of architectural decline. Either it travestied the past in so-called "revivals" of earlier styles, or it perpetrated architec-

At top:—Restoration of the Habitation, Port Royal, N.S.—National Parks Branch photo

tural curiosities of its own, like the much bedecked and many-cupolaed Victorian house.

Finally, as we enter the modern period, Canadian architecture is beginning to drop the imitative and the superfluous elements which descended with it from the Victorian epoch, purifying itself once more in the broad contemporary movement of international functionalism.

COLONIAL GOTHIC

The first, or mediaeval, phase of Canadian architecture began with the founding of the French colonies early in the seventeenth century, and was subsequently current among both the French and the English. It included practically all the building of the seventeenth century, continued in competition with the newer renaissance trends during the eighteenth century and persisted, at least in the construction of certain humbler types of dwellings well into the nineteenth century.

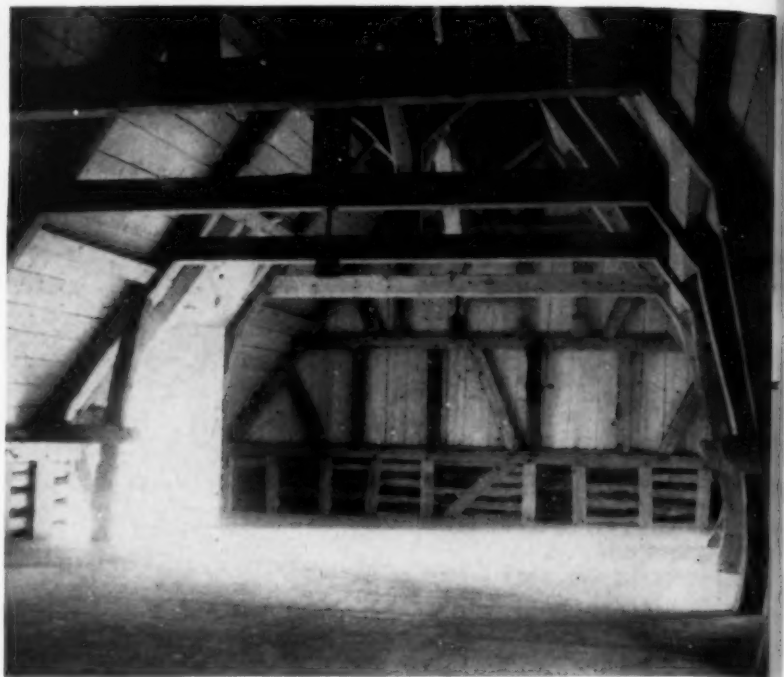
A striking example of its earliest form is the *Habitation* built by the French at Port Royal, Nova Scotia, in 1605. This edifice, designed by Samuel de Champlain and described in his *Voyages*, was the first building erected by white men north of the Gulf of Mexico on a site which has since been permanently inhabited. The original structure was burned by English raiders in

1613, only eight years after its erection. Fortunately for those interested in architecture and in the traditions of Canada's past, it has recently been restored by the Dominion Government on the original foundations, scrupulous attention being given to historical accuracy.

Restorations frequently suffer from artificiality, but the reconstructed *Habitation* is a happy exception to this rule. Pains-taking research by scholars of two continents provided the architect supervising the restoration, Mr. K. D. Harris, with all available facts concerning the original building and with much additional information on the methods employed by French builders in the early seventeenth century. Since all the materials used in the original *Habitation* were hand-made, hand production was employed throughout the restoration. Timbers for the frame were hewn out of logs with the adze and broad-axe; boards and shingles were hand-sawn and hand-split; bricks, hand-pressed into moulds, were fired in a primitive kiln on the spot. Even nails, where they replaced the more usual wooden pegs, were beaten from iron with hammer and anvil. Local Nova Scotian workmen, some of whom were still familiar with the old traditions of hand production, performed most of the labour, under the architect's direction. As a result of the combined efforts of all concerned, the restored *Habitation*

Front view of the *Habitation*, Port Royal, N.S. — National Parks Branch photo





Two views of the Port Royal Habitation. Left:—Entrance gateway as seen from inside the courtyard. Right:—Artisans' sleeping quarters. Note uncovered beams of the roof.

—National Parks Branch photos

conveys an authentic impression of early seventeenth century architecture.

In plan, the *Habitation* is a miniature feudal castle with a central courtyard protected on all sides by surrounding structures. The windows in its external walls are small in size and fortified with iron bars. Bastions projecting from its two front corners defend the main entrance and command the nearby shore of the Annapolis Basin.

Gothic traditions are evident in every aspect of the design. They reveal themselves in the high-pitched roofs, great fireplaces, and correspondingly prominent chimneys; in the steep, narrow, and twisting stairways; in the leaded glass of the windows; in the framework of massive beams which provides the structural skeleton of the building — a framework similar to that of Gothic half-timbered houses in Europe, but here sheathed externally with weatherboarding as a protection against the more severe Canadian climate. Internally the frame structure remains exposed to view. Rooms are without ceilings, frankly revealing the beams and floorboards of the storey above them.

Sister to the Port Royal *Habitation* was

the one built three years later, in 1608, at Quebec. It was apparently similar in its constructive principles to the work at Port Royal, but different in form. An additional storey, irregularly disposed, gave it a castle-like effect of height and picturesqueness. Defence was entrusted primarily to a log stockade, which entirely surrounded the building. The original edifice has long since given way to the streets and later buildings of Quebec, and is known to us today only through the description and the drawing left by its designer, Samuel de Champlain.

Survivals or descendants of the Gothic phase of Canadian architecture can be traced wherever you find a combination of the architectural traits just referred to: steep roofs with pointed gables; large unadorned fireplaces; massive frame construction; steep, narrow and sometimes twisting stairs; and exposed floor and roof beams. Most of the older houses and early churches of the two provinces first settled, Nova Scotia and Quebec, are examples of this type. The hand-sawn weather-boarding of the early seventeenth century is later replaced by shingles or clapboards, or in Quebec the walls may be of stone; but the

basic concepts of form and structure remain the same.*

The general form typical of buildings of this period is shown in diagram (a) of Fig. 1. Lengthen or heighten the proportions of this form, give it one or two storeys, place a chimney in its centre or balancing chimneys at its two ends, and you derive from it the chief types of Gothic houses, both in their French colonial and their English colonial variations. Add one or more towers and spires at one end, and you have the essential form of the early churches.

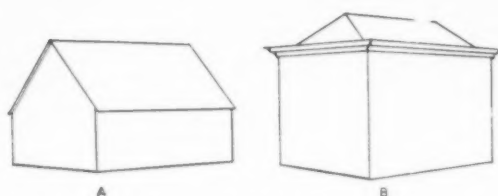


Fig. 1. BASIC FORMS OF COLONIAL HOUSES

(A) Colonial Gothic form with a steep roof, sharply pointed gables at ends, and relatively low wall. (B) Georgian or Renaissance form with low-pitched hipped roof, absence of end gables, and prominent horizontal cornice crowning all four walls.

—Drawing by B. J. Smarik under the author's direction

The basic principle of the style is its functionalism. Wall and roof, beam and chimney—the fundamentals of construction and shelter—these are the things which make this architecture. Except for the woodcarving of the Quebec churches, ornamentation is practically non-existent. No simpler, finer, or more fundamental architecture has ever appeared on this continent. Centuries have passed since this type of building originally evolved. Today we have other needs and other resources. To copy the colonial, either in its Gothic or Georgian

*The classification of colonial buildings according to various architectural styles is a complex matter concerning which authorities sometimes differ. The author must assume responsibility for the distinction drawn in the present article between the mediaeval (or Gothic) and the renaissance phases of Canadian colonial architecture. Some authorities prefer to classify all such architecture as a renaissance style, but the present writer believes the distinction between mediaeval and renaissance derivations to be pertinent and useful. A similar distinction is widely accepted among architectural historians with regard to equivalent phases of American and Latin American colonial architecture.

phases, as many do, seems to the present writer a futile form of ancestor worship. But in its own time, given the needs, the material and the structural methods of its epoch, colonial Gothic was the perfect fulfilment of a sound architectural ideal.

The oldest surviving examples of this first phase of Canadian architecture are to be found in the province of Quebec, and date from the seventeenth century. According to the artist-historian, C. W. Jeffreys, the oldest house now standing in Canada is probably the Jesuit House at Sillery near Quebec. It was built in 1637 by Father LeJeune and occupied the following year by the Jesuits as an Indian Mission. In 1657, fire destroyed its inflammable portions, but they were rebuilt the same year. As it now stands, the stone walls date from the original structure of 1637, and the woodwork from the rebuilding in 1657. Other early Quebec houses, as dated by Professor Ramsay Traquair, a leading authority on early French Canadian architecture, are the Villeneuve House near Charlesbourg (1684), the Presbytery at Batiscan (1698), the St. Gabriel Farm at Pointe St. Charles near Montreal (1698), and the Manor at Baie St. Paul (1718). The Château de Ramezay (1705) illustrates a variant type common in and around Montreal, a type with stone parapets at the ends surmounted by twin chimneys.

In these examples of the oldest house-forms, roof-lines are straight and rise from the walls with hardly any projection of the eaves; porches are absent. A later variation of the Quebec cottage possesses widely projecting eaves and a "bell-cast" roof, which curves outward at the bottom to extend over a long but narrow porch. According to Professor Traquair, these features were not introduced until the end of the eighteenth century, and were probably derived from Spanish colonial sources by way of the French settlements in Louisiana.

More ambitious buildings which adhere to mediaeval forms, though they may involve renaissance features in their decoration, include the old Seminary (begun 1678)



FOUR STAGES IN THE
EVOLUTION OF THE
FRENCH CANADIAN
HOUSE

Photograph at lower left by
G. A. Driscoll, A.R.P.S.

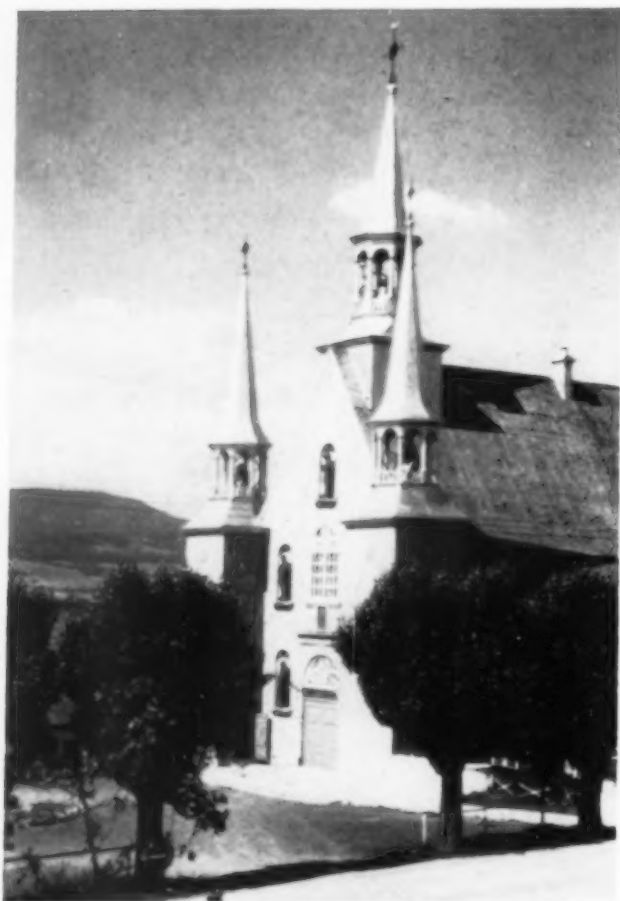
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At left:—The old Goulet house, St. Pierre, Island of Orleans, said to date back to the year 1668. It is one of the few that escaped the conflagration of 1759. Top left:—This house, built about 1675, shows one of the earliest forms of Quebec house with pignon roof sloping inward from two ends as well as from front and back. Steep pitch of roof, informal placement of chimney and door, and finials at ends of roof crest are typical colonial Gothic features. The other two houses (above and right) are later variations of the basic Gothic form. The outward curve of the roof over the eaves and the introduction of the porch are ascribed by Professor Ramsay Traquair to Spanish influences transmitted in the 18th century by way of New Orleans.





Exterior of Church of Ste. Famille, Island of Orleans. Begun in 1743. —Photo by the author

and the General Hospital (established 1693), both in Quebec City, and the Ursuline Convent at Three Rivers (1752). The oldest existing French colonial churches include the one at Cap de la Madeleine built about 1717, the Huron Mission Church of Notre Dame de la Jeune Lorette (1730), and the churches of St. Francis and of the Holy Family on the Island of Orleans. The church of the Holy Family, or La Sainte Famille, begun in 1743, possesses one of the most interesting early church exteriors. In the twin towers and five niches of its facade, the niches set with statues of the saints, we see a modest colonial descendant of the towered and sculptured west fronts of French Gothic cathedrals.

In striking contrast to the wealth of early architecture in Quebec, there is not a single surviving example of French colonial archi-

tecture in Nova Scotia. Why this is so was well set forth in a letter recently received by the author from a leading authority on Acadian history, Dr. J. Clarence Webster. "Many people have asked me about the old French churches in Acadia", writes Dr. Webster, "and have wondered why there are none of them to be seen today. The main reason lies in the troubled conditions to which this area was subject. From the earliest period until the mid-eighteenth century, Acadia was the scene of conflict and warfare. Settlements were few. There was no steady progressive development such as took place in Quebec. Churches were built of wood and were few in number. I have read most of the French literature dealing with Acadia and found nothing of importance relating to church architecture.

"Undoubtedly the largest and most pretentious edifice erected was the one built by the Abbé Le Loutre at Fort Beauséjour. It was designed after the model of the



Left:—C
constru



The interior of the parish church of St. François de Sales on the Island of Orleans which was built in 1732. Conforming to the basic plan of a wide nave and semicircular apse, the general effect of the interior is one of richness. Some of the elaborate wood-carving that adorns the walls of the apse is shown in this picture.

—Photo by Professor Ramsay Traquair

Left:—Convent of the Ursulines at Three Rivers. Rebuilt in 1807 on the site of an earlier building constructed in 1752.



*St. John's Church, Kings Co., Nova Scotia.
Consecrated 1810.* —Photo by Ronald Peck

Abbé Joseph-Thomas-François le Roux, and destroyed by fire in 1795. This is one of the very few remaining examples of interior church decoration of the Acadian period. The church was built by Acadians who had returned after the expulsion; it had a thatched roof." Painted in white and black, with tastefully disposed accents of yellow and blue, this little vestige of Acadian architecture suggests that the Acadians had that flair for colour which is characteristic of their French cousins in both the old and new worlds.

Following the expulsion of the Acadians in 1755, Nova Scotia was largely resettled by English-speaking colonists, and it is their work which now constitutes the oldest remaining phase of Canadian architecture in the Maritimes. The largest, and culturally most influential, group was composed of the so-called "New England Planters", who migrated from New England in the 1760's. As a result of their activity and influence, the architectural traditions which were to characterize Nova Scotia were largely founded on New England models. The actual timber frames of some of the early houses were made in New England and shipped by vessel to the new outpost.

Although these activities took place during the second half of the eighteenth century,

Basilica at Quebec and was said to have been nearly as large, but it was no sooner erected than it was burned by the French themselves during the siege of the Fort in 1755. The only article saved from this church was the beautiful bell now preserved in the Beauséjour Museum. It was made in Rochefort, France, in 1754."

As a result of the circumstances set forth by Dr. Webster, the modern visitor who searches for architectural remains in Nova Scotia's one-time French settlements, such as Grand Pré, finds at best the moss-grown stones of cellar walls which once lay beneath Acadian homes. The ruins of the fortress at Louisbourg and the earthworks of Fort Beauséjour at Chignecto are almost the only other existing remains of Acadian architecture.

One small wooden panel from an Acadian church is now preserved in the historical museum at Fort Beauséjour. To quote from the museum catalogue, this panel was taken "... from the first church built in 1782 by

Little Dutch Church, Halifax, N.S.

—Courtesy Nova Scotia Bureau of Information



when New England was at the height of the second or Georgian phase of its architectural development, the older mediaeval forms still persisted for the less pretentious types of building, and it was mainly these which were transplanted to Nova Scotia. As a result, all the familiar forms of early New England dwellings—the "Cape Cod cottage", the two-storey farm house, and the "salt-box" type with two storeys in front and only one at the back—have their counterparts in Nova Scotia. Basic form and general features, such as the framework of massive beams, and the steep narrow stairs, are of the kind already discussed, although the pitch of the roof had gradually been lowered as the style was carried forward into the eighteenth century. In contrast to the stone commonly used in Quebec, external walls of the Nova Scotian houses are of shingle or clapboard. Shingles and nails are of the hand-made variety in the oldest remaining examples. The chimney nearly always runs up through the centre of the house, with fireplaces on two or three sides of it; or there may be a chimney in the middle of each half of a large house.

None of the actual houses built by the "Planters" remain today, but the types they established can be seen in many parts of Nova Scotia. The roads between Halifax and Port Royal are flanked by a considerable

number of them. Some of the best known examples include the Perry-Borden House (probably about 1765) and the Will Stewart House (probably late 1700's), both in Grand Pré; the Borden-Newcombe House in Avonport (about 1800); Kent Lodge, the Patriquin House, and other houses in Wolfville and the surrounding region.

The oldest remaining churches of Nova Scotia are either Gothic or what might be called "transitional"—that is Gothic in their basic form, but with Georgian details. Of the former type is the Little Dutch Church in Halifax, built in 1755 for German Palatine settlers who later founded Lunenburg; St. Edward's at Clementsport (consecrated 1797), and the Old Church at Grand Pré (completed 1811; tower added 1818).

Transition toward classical forms is seen in the doorway design and other detail of St. Mary's at Auburn (consecrated 1790) and of St. James on Church Street near Wolfville (consecrated 1810). The largest of the transitional examples is St. Paul's in Halifax (1750). Various aspects of St. Paul's show the increasing influence of renaissance or Georgian architectural concepts. Among these we may note the enlargement and subdivision of the earlier spire-form into a two-storeyed steeple, the horizontal cornices which cross the front and rear ends of

Parlour of an early Quebec house. Note narrow stairway at left.

—Photo by the author



Narrow twisting stairway, typical of colonial Gothic architecture, found in an old house at Kingston, N.B.

—Photo by C. Lillian Fairweather





Château de Ramezay, Montreal (1703). The "stone parapet surmounted by twin chimneys" which is mentioned in the text occurs at the other end of the building and cannot be seen in this photograph.

—Courtesy Tourist Development Bureau, Montreal

the building, a porch with classical columns, and the large "Palladian" window in the rear wall.

COLONIAL RENAISSANCE

The second or renaissance phase of colonial architecture owed its emergence to two chief causes: the change from Gothic to renaissance ideals which had taken place in Europe, and the development of a well-to-do upper class in the New World. Beginning in Italy, renaissance conceptions of design had gradually spread northward through Europe, superseding the older Gothic forms. The new architectural fashion was at its height in France and England during the seventeenth century, and was destined eventually to spread to the New World. During the seventeenth century, however, conditions in Canada were still too primitive to permit the cultivation of such an aristocratic and expensive style of building. Hence the colonies clung to the simpler Gothic forms for a century or more after they had ceased to dominate European architecture.

By the eighteenth and early nineteenth centuries, new economic and social conditions were arising in the colonies, at least

in certain areas and for certain classes. The eastern portions of the continent had emerged from the stress of pioneer hardship and had produced a wealthy class that desired comforts and luxuries akin to those enjoyed by the privileged classes of Europe.

One result of these changes in social and cultural conditions was the development of renaissance architecture in the colonies. In its domestic phase, as has already been implied, the new style was aristocratic in impulse: the architectural expression of an ideal of ample and elegant living. To achieve this ideal, rooms were enlarged and heightened, entrance halls expanded, stairways extended and broadened. The working parts of architecture, such as the beams supporting the upper storeys, were now politely screened from view behind ceilings, the latter often a field for elaborate ornament. Entrances, fireplaces, and sometimes other features, were framed in settings of classical orders, for the use of elements derived from ancient Greek and Roman models was part of the renaissance tradition. Some of the classical features thus employed by Georgian architects are shown in Fig. 2.

AN INTRODUCTION TO CANADIAN ARCHITECTURE

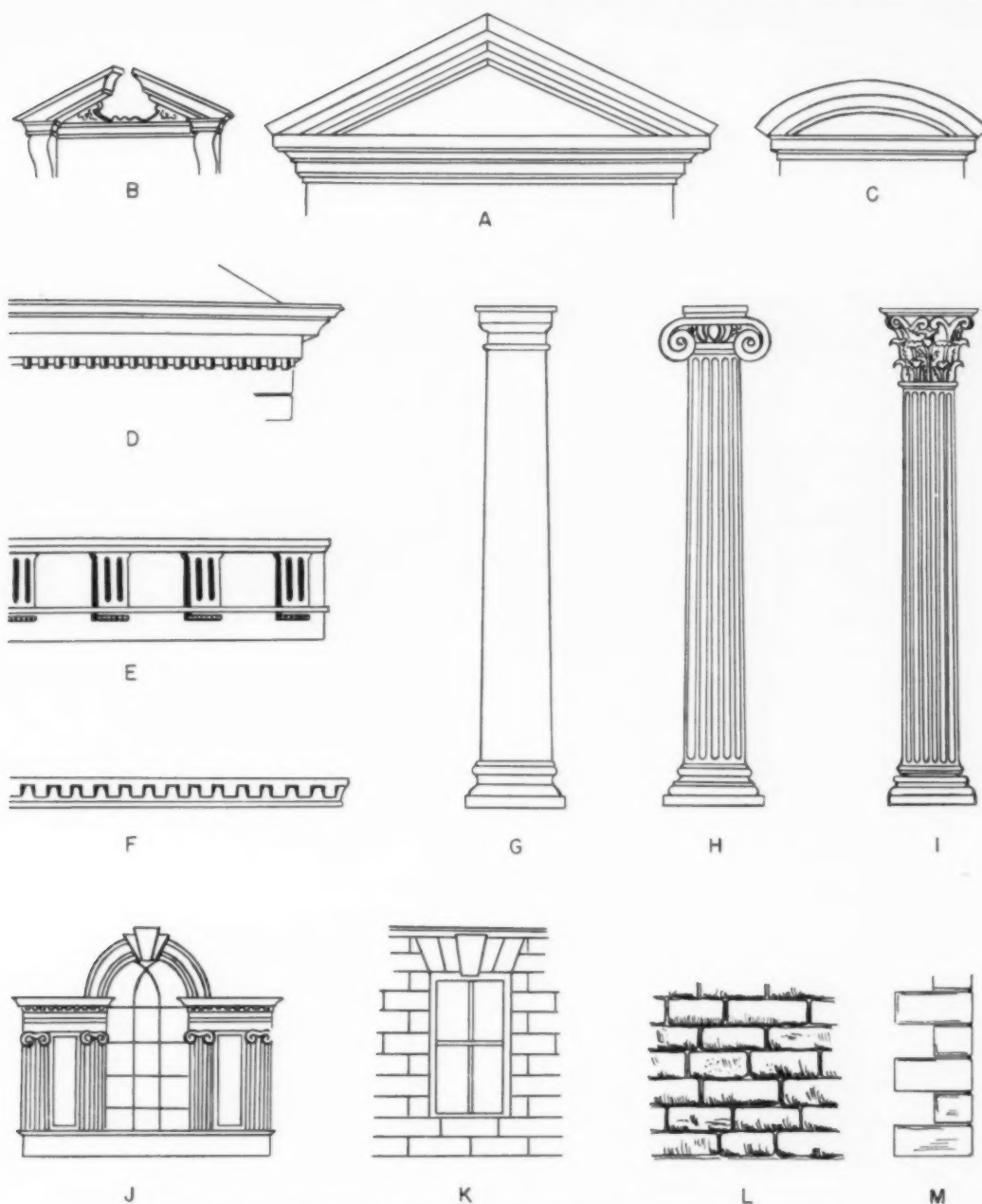


Fig. 2. CLASSICAL FEATURES EMPLOYED IN COLONIAL RENAISSANCE ARCHITECTURE

(A) Triangular pediment used over doors, windows, or porches. (B and C) Two variations of the pediment form. (D) Projecting cornice at top of walls. (E) Doric frieze with alternating "Triglyphs" and free spaces or "Metopes". Invented by the ancient Greeks, this frieze and also the Doric column (G) are here shown as they were modified by the Romans. (F) Dentil moulding of small blocks and intervening spaces; used on cornices, door frames, mantels, etc. (G, H, I,) Three types of classical column, respectively the Doric, Ionic, and Corinthian. (J) Palladian window with central arched form and smaller flanking rectangles; named after the Italian Renaissance architect, Andrea Palladio, whose work popularized this combination. (K) Grooved masonry emphasizing the size and regularity of the blocks of stone. (L) Rusticated or rough-hewn masonry. Both these types of masonry (K and L) are used on the lower stories of buildings to produce an effect of strength and stability. (M) Prominent "quoins" or corner stones used to produce an effect of strength at the corners of a building. The features shown in the bottom row of drawings were derived by colonial builders from Italian Renaissance sources. The remaining forms illustrated are ancient Greek or Roman features revived and transmitted by the Italian Renaissance.

—Drawings by B. J. Smarik under the author's direction



Georgian mansion. Acacia Grove near Port Williams, Nova Scotia.

—Photo by Ronald Peck

Eventually the basic form of buildings changed in order to conform more closely to the new classical mode. Steep roofs and pointed gables were now anathema—according to the new taste they smacked of mediaeval “barbarity”. Instead, the architect must seek a form of roof as inconspicuous as possible, and must emphasize a projecting horizontal cornice like that to be seen in ancient temples. The most common solution of the problem was a more or less cubical form surmounted by a hipped roof, as shown in (b), Fig. 1.

Great formality was another characteristic of the style. Whereas the earlier colonial Gothic had been relatively free in its designs, placing windows, doors and chimneys for convenience, without concern for abstract principles, Georgian taste demanded strict conformity to an established pattern. Whatever windows, chimneys, or other features occurred on one side of the central axis, must be repeated in the same form and arrangement on the other side. The resulting symmetry was sometimes extended to twin

wings projecting from the two ends of the building, or twin extensions from its front or rear. Formal gardens provided a link between buildings and grounds, as exemplified in English gardens of the period, and in the Williamsburg restoration in Virginia; but the writer does not know of any extensive examples of this style of gardening in colonial Canada.

At their best, the developments just described were gracious and charming. They were the outcome of a new degree of opulence and security; and, for those who were fortunate enough to possess and enjoy them, made possible a new ease and amplitude of life. So far as domestic architecture is concerned, however, these advantages were restricted to the relatively well-to-do. Most Canadians were obliged by circumstance to continue building on the simpler and more restricted plane derived from the unadorned functionalism of earlier models.

Built by only one class, and at a time when the population of Canada was still small, examples of Georgian architecture are

Georgian wallpaper, De-Wolf House, Wolfville, Nova Scotia.

—Photo by MacAulay Studio



relatively few in comparison with the country's total architectural production; but with a little application they can be discovered in most parts of Quebec, the Maritime provinces, and southern Ontario. Any eighteenth or early nineteenth century mansion with a hipped roof, with corniced eaves and with classical pilasters around its doorway and elsewhere, is probably Georgian, as is also the public building with pilastered walls or prominent classical portico.

There was, of course, no sharp or sudden break between the Gothic and renaissance phases of colonial architecture. The one style gradually gave way to the other and, as we have already noted, there are buildings like St. Paul's Church in Halifax, which combine the characteristics of the two styles and can therefore be called "transitional."

In many of the old Quebec churches, the mediaeval architectural form shelters interior woodwork and altar-carvings of a renaissance character. Columns, pilasters,

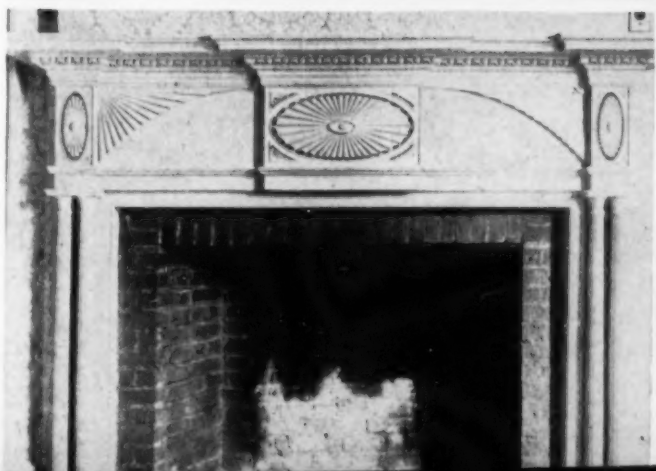
EXAMPLES OF GEORGIAN ARCHITECTURE

Top:—Georgian Interior. Poplar Hall Drawing Room, Maitland, Ontario. "The photograph is of a full-scale model of the drawing room in Poplar Hall. Windows, mantel, door and arches are exact reproductions of the originals. The room was furnished when it was on exhibition in the Art Gallery at Toronto, in the manner of a drawing room of 1798. It is not unreasonable to suggest that the furniture in so beautiful a room should be of equal dignity and workmanship. The floor is pine painted blue and the walls are painted white."

Centre:—Typical Georgian doorway, the Prest House, Queenston, Ontario. "This doorway comes from a good house with well-proportioned windows and mantels. The door panels are flush but quite as effective as ones with more elaborate mouldings. Unfortunately the fan-light is a fake. It is very skilfully made of wood with raised mouldings and would deceive most people from the distance of even a few feet."

Bottom:—Mantel in the Clench House, Niagara-on-the-Lake. "Most of the good mantels follow the pattern of this one, but not all are as elaborate. The panel in the centre is found in the humblest mantel, but without the elliptical design with reeded fluting. Elliptical and fan-fluting are found in the ceilings and mantels of the architect brothers Adam in England at the end of the eighteenth century."

—From "The Early Buildings of Ontario"
by permission of University of Toronto Press and
the author, Professor Eric Arthur





Left:—Osgoode Hall Law Courts, Toronto

—Courtesy Pringle and Booth



Centre:—Front view, Legislative Building

and mouldings derived from classical models are combined with garlands of fruit and flowers, and with a liberal use of figure sculpture both in relief and "in the round". Professor Traquair defines the style of most of these decorations as "that of Louis XIV or Louis XV but with the freedom natural in

a colonial style". Finished in white and touched with gold, supplemented by the embroidered vestments and the gleaming silver of French colonial handicraft, these ornamental interiors provided a striking setting for the celebration of the Mass. It is easy to imagine how vivid must have been the impression they produced upon pioneer generations who still felt the pressure of the wilderness around them, and who found in the church one of their few opportunities to experience the stimulus and splendour of their European cultural heritage.

In Quebec the influence of classicism was largely restricted to interior woodwork of the kind just considered, or to the treatment of doorways and other details. Basic forms continued to adhere to the older models. The occasional exceptions to this rule are referred to by Professor Traquair, in a recent letter, as follows: "In the early nineteenth century, when the traditional style was weakening, a very 'classic' style



Colonnade, Officers' Quarters and Guard Room Building, Fort Lennox National Historic Park, Ile-aux-Noix, Quebec. —National Parks Bureau photo



GIAN PUBLIC BUILDINGS
w, Legislative Building, Halifax.



Right:—Government House, Halifax, looking across the two projecting wings.
—Courtesy Nova Scotia Bureau of Information

appears in such churches as l'Assomption, Ste. Rose on the Ile Jésus, or the west front of Sault au Récollet. These churches are large, severely classical, and rather pompous. Their style is derived from the later Italian renaissance."

More extensive use of colonial renaissance features can be observed in the Georgian style of the English-speaking settlements. Halifax boasts a number of interesting examples, including both public and domestic buildings. One of the latter type is "Gorsebrook", the residence of an early commercial magnate, the Honourable Enos Collins. The aristocratic context of Georgian architecture is well indicated by the fact that, to quote the late Andrew R. Cobb, Mr. Collins "built up what at that period was held to be the greatest private fortune in British North America". The Gorsebrook estate, now preserved as the property of the Gorsebrook Golf Club, comprises the mansion, carriage house, servants

quarters, and grounds. The exterior of the house is comparatively modest in effect, but the interior woodwork and stuccoed ceilings reveal a wealth of characteristic Georgian detail.

Georgian public buildings in Halifax include the imposing Government House



St. James Church, Newcastle, New Brunswick.
—Photo by Margaret Perry



(about 1810) and the Legislative Building (1811). Applied to structures of this type, the Georgian style created an impression of dignity and permanence well suited to the expression of governmental functions. It could also, as is noticeable in Government House, create something of the aloofness of a palace, tacitly implying that the man in the street should keep at a respectful distance.

GREEK REVIVAL ARCHITECTURE

Above:—Fawcett Hall, Mount Allison University, Sackville, N.B.

—Courtesy Mount Allison University

At left:—St. Andrews Church, Niagara-on-the-Lake. "The exterior of this church is in the style of the Greek Revival. While most of our Colonial buildings show the influence of the English Renaissance in their pilasters and detail, here the columns and pediment above them are decidedly Greek. The interior is painted white, with box pews and fine pulpit with curving stairs. The side windows are very large and similar to many of the church windows designed by Sir Christopher Wren."

—From "The Early Buildings of Ontario"
by permission of University of Toronto Press,
and the author, Professor Eric Arthur



Indeed Government House probably comes closer than any other building in Canada to the massive, fortress-like effect of the Italian renaissance palaces that helped to inspire the Georgian style.

Among the examples of Georgian architecture elsewhere in Nova Scotia, mention should be made of the mansions at Mount Uniacke, at Martock near Windsor, and at Town Plot near Port Williams. The example last mentioned, now the Prescott House, is traditionally known as "Acacia Grove".

New Brunswick possesses several striking Georgian houses at Dorchester, and an interesting group of buildings designed by William Murray in the Miramichi district. Murray's work was described by Miss Louise

GOthic REVIVAL ARCHITECTURE

The Parliament Buildings, Ottawa. Above:—View of the East Block, right foreground, and part of the Centre Block in background. At right:—The entrance hall of the Centre Block, showing Gothic ribbed ceiling and column.

—National Film Board photos



Manny in an article in *Maritime Art* (April-May 1942). To this architect we owe several buildings in Newcastle, notably St. James' Church (about 1826), the Murray House (built by the architect for himself), the Judge Williston House, and the old Country Court House. Also by Murray are St. Paul's Church at Bushville (about 1825), St. Peter's in Barthog (about 1853), the Rankin House at Douglastown, and possibly the Peters House at Bushville (now the Miramichi Golf Club). One of Murray's contemporaries, Robert Cooney, described the house last mentioned as "the most splendid of the handsome villas on the Miramichi".

Outstanding among the Georgian buildings of Saint John, New Brunswick, is the Court House. Its classical facade is said to have been completed originally by a ground-storey portico which no longer exists.

For our knowledge of Georgian architecture in Ontario, we are chiefly indebted to the writings of Professor Eric Arthur of the University of Toronto. This authority reports that the Niagara Peninsula and the Kingston Road from Hamilton to Lancaster are the principal areas of Georgian building in the province. Among the towns richest in houses of this period, he mentions Niagara-on-the-Lake, Maitland, Perth, Port Hope, Brockville and Kingston. Fine domestic examples include Poplar Hall, Maitland (about 1810), "one of the best examples of the early nineteenth century"; the Barnum House, Grafton; the Blue Stone House, Port Hope, and the Clench House at Niagara-on-the-Lake (about 1830). Of the Georgian public buildings in Ontario, the finest are the Osgoode Hall Law Courts in Toronto (1829),

and St. Andrew's Church at Niagara-on-the-Lake (about 1830). In the latter we reach another transition; the transition from the Georgian style to the more complete classicism of the Greek Revival which was to follow.

Impressive examples of Georgian military architecture are Fort Lennox on the Ile-aux-Noix in the Richelieu River, Quebec (1812); Fort Henry, Kingston, Ontario (1812); the Citadel, Quebec (1820-32), and the barracks at Carillon on the Ottawa River (1830-37), the latter now a military museum.

A beautiful decorative feature developed in Georgian times was the use of pictorial wall-paper. Hand-printed from wood-blocks in Europe, such paper occasionally found its way across the sea to provide a treasured enrichment for the homes of well-to-do colonists. I know of only two Canadian examples, both in Nova Scotia. Doubtless there were, and perhaps still are, others. Of the two just mentioned, one is in the DeWolf House in Wolfville, now a local historical museum. This house was built in 1812 by Thomas Andrew Strange DeWolf, son of Judge Elisha DeWolf. According to tradition, the pictorial wall-paper was presented to Thomas DeWolf as a wedding present from H.R.H. the Duke of Kent, father of Queen Victoria, and one-time commander of British forces in Nova Scotia. On his journeys between Halifax and Annapolis Royal, the Duke was frequently entertained by Judge DeWolf, and the gift of pictorial paper for the parlour of the judge's son was a result of this association. Some subsequent occupant of the house varnished the paper, with the result that its colours have been yellowed and darkened; but its scenes of romantic couples in Italianate gardens are spacious in effect and expressive of the period which produced them.

The second example of pictorial wall-paper mentioned above was formerly located in a house in Economy, on the north shore of the Minas Basin. Upon visiting this house in 1939, I found that the Georgian paper had been stripped from the walls a few days earlier and was lying in rolls on the back

"Wedding Cake" house in Woodstock, New Brunswick.
—Photo by the author



AN INTRODUCTION TO CANADIAN ARCHITECTURE



Romanesque Revival Architecture. The Physics Building, Queen's University, Kingston, Ontario.
—Courtesy Queen's University

architectural point of view, it was unfortunate that national expansion and consequent increase of building should take place during the Victorian period. Precisely at that time the unassimilated industrial revolution and other causes had reduced architecture to a very low ebb in its history. As a result, *most* Canadian architecture is not the *best* Canadian architecture. It was built too late to retain the virtues of the colonial period; too early to profit by the virtues of the modern. The social and technological conditions which had moulded the earlier styles were disappearing; those which were later to mould the life of the modern world had not yet come into being.

It was inevitable under these circumstances that the Victorian architect should lack the creative conviction which produces style. And not being himself able to create a style, he copied the styles which had been achieved by more integrated epochs in the past. The latent classicism of the Georgian period gave way to a full "Greek revival", and this to a "Gothic revival", and this to a "Romanesque revival". In due course the Roman, renaissance, and baroque styles were also "revived". Most of the larger and many of the smaller buildings in Canada today belong in one or another of these revivalistic groups.

The Greek revival, the first of the series, touched Canada only lightly. Perhaps this was due to the fact that the period of its ascendancy—the first half of the nineteenth

porch. The occupant of the house explained that he was tired of having to show the paper to visitors. As it was coming loose from the walls in any case, he had decided to remove it. I was able to buy what remained of it from him, and thus to preserve it from further disintegration. Its pictures tell the story of one of the heroes of Homeric legend, and show groups of figures, variously occupied, against a background of hills set with Greek temples. Newspapers were applied as a backing between the wall-paper and the plaster, and some of these still adhere to the back of the wall-paper. They are dated 1840, 1845, and 1853. If, as seems probable, they were applied when the wall-paper was first put in place, this would mean that the papering could not have been done before 1853.

THE VICTORIAN PERIOD: AGE OF REVIVALS

During the middle of the nineteenth century, Canadian architecture moved into its third phase, which we are somewhat loosely classifying as "Victorian". From the

Casa Loma, Toronto.
—Courtesy Pringle and Booth





Romanesque Revival Architecture. Windsor Station, Montreal.
—C.P.R. photo

century—was past before Canadian expansion reached its full development. I know of no major Canadian building in this style. We have already noted that the church of St. Andrew at Niagara-on-the-Lake may be regarded as a transitional building. Its Doric porch is probably the finest Canadian example of the Greek revival impulse. The building as a whole, however, retains the form typical of the Georgian church, instead of reverting completely to that of the ancient temple.

Some of the Georgian mansions mentioned earlier in this article have selected features which press classicism to the limits

characteristic of the Greek revival. Thus Gorsebrook in Halifax has elaborately accurate Ionic columns in its dining room, and Martock near Windsor, Nova Scotia, possessed a temple-like Ionic porch—the latter now falling into decay. Among the other Canadian buildings which embody Greek revival ideals, at least to the extent of having temple-like porches, may be noted Dundurn Castle in Hamilton, Fawcett Memorial Hall at Mount Allison University, Sackville, N.B., and two buildings in Antigonish, Nova Scotia. The two examples in Antigonish, located at the junction of Main and Court Streets, are the Municipal Building (1854), and the Court House (1855). The former was erected and originally used by St. Francis Xavier University. Both of these buildings are said to have been constructed by Alexander MacDonald, locally known as "Sandy the Carpenter".

Although the Greek revival left comparatively few traces in Canada, the Gothic and Romanesque revivals left many. Coming into force during the second half of the nineteenth century—the Gothic roughly in the fifties and sixties; the Romanesque during the eighties and nineties—they governed public taste during an era of extensive Canadian building operations.

At this point we should perhaps stop a moment to distinguish between the earlier

Hart House, University of Toronto, Ontario.

—Courtesy Hart House



Front view, Uniltation,



Chateau Laurier Hotel, Ottawa.

—C.N.R. photo

phase of architecture which we have called "colonial Gothic" and the Victorian "Gothic revival". The occurrence of the term "Gothic" in both cases might easily lead to confusion. Although the two movements have in common certain traits of the Gothic style, such as steep roofs and pointed gables, there is a wide difference between them in other respects. Colonial Gothic was *original* Gothic—a *survival*, not a *revival*. The builders had no desire to affect any given style. They wanted to provide shelters to meet human needs and they built them in the only way they knew. The Gothic revival, on the other hand, reversed this situation. It was primarily a style-conscious movement, a desire to reproduce the *appearance* of buildings from the middle ages, and only indirectly concerned with questions of function and utility.

At the head of Gothic revival effort in Canada stand the many-towered cathedral-like Parliament Buildings in Ottawa, begun in 1859. They are undoubtedly one of the most extensive and impressive manifestations of the Gothic revival on this continent or elsewhere. Here we see the pointed arches, the pinnacles, the grotesquely carved gargoyles, and the various other features which originated in the cathedral buildings of the middle ages. The use of polychrome masonry had originally been characteristic



of Italian Gothic architecture. John Ruskin's enthusiasm for work of this type led to its adoption as a feature of the Gothic revival in England, whence it was relayed to Canada.

From the imposing climax formed by the Parliament Buildings, the Gothic revival sifts down through numerous institutional buildings and finally reaches domestic scale in many quaintly Gothicized dwellings. The latter are particularly noticeable among the country homes of New Brunswick and Ontario. In New Brunswick they are usually of wood and sometimes attain a "wedding cake" elaboration of Gothic detail. In Ontario they are most often of

Unatation, Toronto.

—C.P.R. photo



Legislative Building, Winnipeg.

—Courtesy Travel & Publicity Bureau, Winnipeg



red and yellow brick, following the polychrome tradition and using the two colours as a means of adding decorative interest to the structure.

The Romanesque revival produced a series of massive, castle-like edifices. Among the larger and more familiar examples are the Windsor Station in Montreal, the Library of McGill University, the Physics Building and other early buildings of Queen's University; the Library, University College, and Victoria College at the University of Toronto; the Ontario Parliament Buildings in Toronto, and the city halls of Toronto and Hamilton. Round arches, massive masonry, elaborate decorative carving around arches and doorways, are hallmarks of this style. These features are copied from the churches and castles of feudal Europe built between the tenth and the twelfth centuries.

The Greek, Gothic, and Romanesque revivals had been successively launched in opposition to each other, and for a time waged among themselves the "battle of the styles". Toward the end of the nineteenth century, these rivalries gave way before a general acceptance of eclecticism. Practically *all* the styles of the past were recognized as potential sources of "inspiration" for modern copies or adaptations. This situation continued well into the twentieth century and still prevails in the more conservative architectural circles.

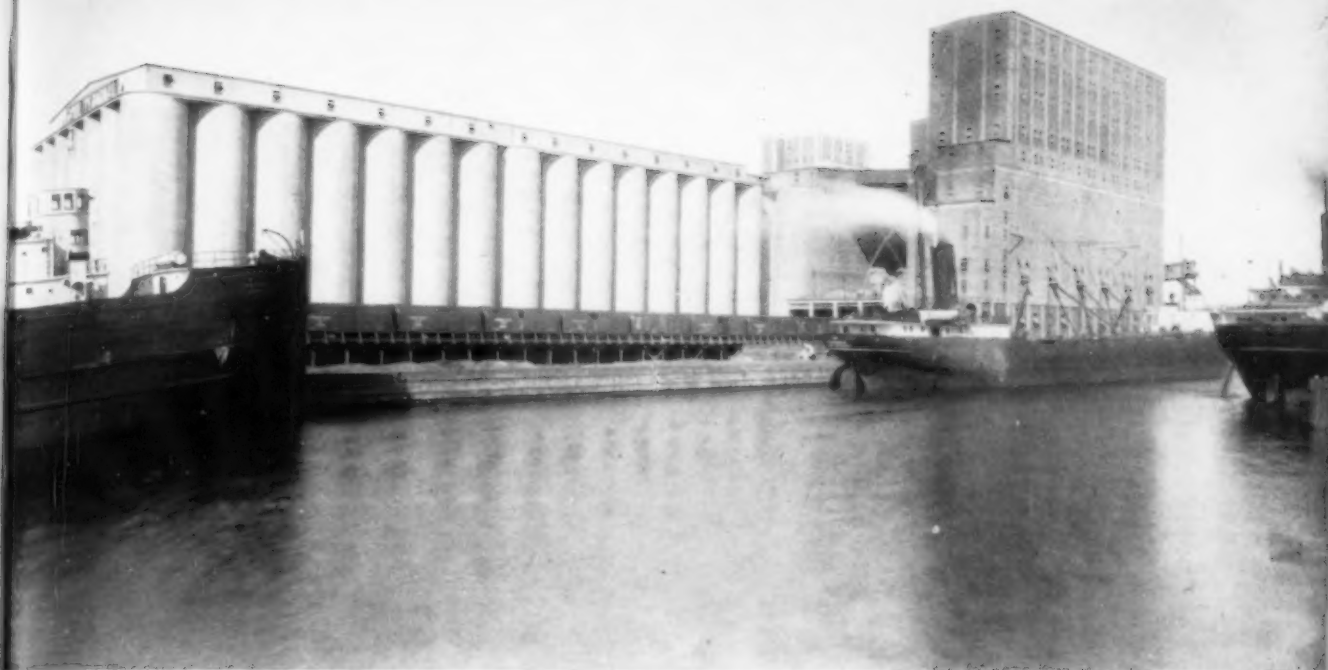
A certain conventional sense of fitness has developed in assigning the various historic styles to modern functions. Gothic has been favoured for churches and university buildings. Trinity College and Hart House at the University of Toronto, and the buildings of McMaster University and the University of Western Ontario are among the more recent expressions of the taste for collegiate Gothic. The spacious structures designed by the ancient Romans as public baths have appealed to eclectic architects as the most appropriate precedent for planning a modern railway station. Hence many of the larger stations of the early twentieth century are cast in Roman moulds, as may be illustrated by the Union Station in Toronto. For government buildings, eclectic architects of recent decades have favoured renaissance models which emphasize a commanding central dome. The Legislative Building in Winnipeg typifies the resulting renaissance revival. To follow all the variations and vagaries of early twentieth century eclecticism, including the "revival" of our own colonial traditions, would require a volume and must be left to the reader's observation of the buildings around him.

Despite the plagiarism involved in their borrowed styles, some of the architectural products of the revivals achieved distinction in other respects. The federal Parliament Buildings are impressive in site, spacing, and general disposition of masses, though they



Representative of many thousands of old log cabins scattered throughout Canada's northland is this one in Quebec, now used as a fishing camp. Rear section of cabin still has original hand shingling. Part in the foreground has been repaired.

—Courtesy J. C. Meadowcroft



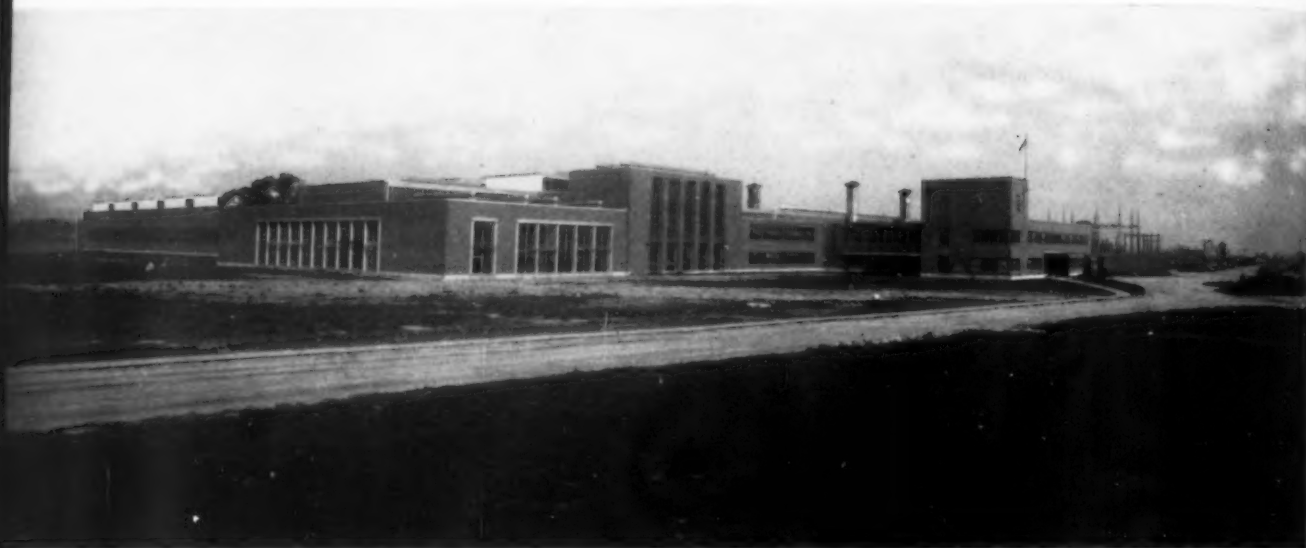
Modern grain elevator, Fort William, Ontario.

would be equally so without their imitative Gothic surfaces. The Toronto Union Station presents an exterior of great dignity, and appears to function satisfactorily in the handling of crowds, although its interior atmosphere is cold and forbidding.

In general, however, revival architecture is subject to a number of serious limitations. In yielding to the glamour of the past, it substitutes appearance for reality and endangers the basic functional integrity without which there can be no sound building. A Greek portico, for instance, will be attached to a Canadian museum or bank because Greek architectural forms are considered to be intrinsically impressive and beautiful. But let us remember that ancient Greece was a southern land given to outdoor living and that the religious rites originally performed in a Greek temple were of short duration and required no close visual attention. Canada, on the other hand, is a northern country where the major activities of life take place indoors. Furthermore, the pursuits carried on in a Canadian museum or bank demand constant and painstaking use of the eyes. The "revived" Greek portico darkens the windows below it, cutting off

some of the light that would otherwise reach the interior; as a result those who use the building either strain their eyes unnecessarily, or burn more artificial light than would otherwise be required. Inconvenience is imposed on Canadians today as a result of the unthinking imitation of past forms inappropriate for present functions. The original Greeks would have laughed at us for copying their temples at such expense to ourselves. They themselves never copied anything. They created new forms to meet their own new needs.

These limitations of revival architecture reached a *reductio ad absurdum* in Sir Henry Pellatt's castle, Casa Loma, erected in Toronto between 1911 and 1914. This huge pile combines the features of many different feudal castles which Sir Henry had admired in the Old World. It has rightly (but with unconscious irony) been described as "something not equalled on this continent". Eight hundred tons of coal a year are said to have been required to heat it, although only half of its 98 rooms were ever finished. So impractical did it prove as a modern residence that it had to be abandoned not long after its erection, and for years remained "hidden



Factory of Aluminum Company of Canada, Kingston, Ontario.

—Courtesy J. C. Meadowcroft

behind massive walls with locked doors and ghostly emptiness". No better use has been found for it than to let it serve as a tourist attraction for the curious.

Apart from the lack of functional efficiency which, to one degree or another, accompanied most revival architecture, it produced another unfortunate result: the stylistic disorder which it imposed upon the community. In earlier ages, each period and place evolved its own style and erected all its buildings in that one style, with the result that the buildings of a community harmonized with each other. No original Greek temple was ever seen in juxtaposition to an original Romanesque castle or Gothic cathedral. The revival architects, on the other hand, copied *all* the styles simultaneously and set them all down in the same town, often in the same block. As a result, our average city street is a collection of discordant styles that were never meant to be seen together.

Before leaving the Victorian and post-Victorian period, we must note two secondary architectural expressions which stood apart from the eclectic currents of the times. One is the much-fretted and many-turreted Victorian house. Its clustered forms

and trimmings seem vaguely reminiscent of the Gothic revival, but actual Gothic detail is usually absent. The shortcomings of the Victorian house, with regard to both visual elegance and functional planning, illustrate the dilemma faced by the average Victorian architect. If he copied the past, he was confronted by the difficulties of eclecticism; if he did not copy the past, his creations were likely to be awkward and formless. The times were simply not ripe for a mature and fundamental architecture.

Only in one humble form do we meet strictly functional architecture during Victorian times and this in a type of building so different from those we have been considering that we normally fail to associate it with the Victorian period. That form is the pioneer log cabin. Associated with frontier life, the log cabin is likely to be vaguely identified in the imagination with the beginnings of New World history. Actually, however, it was not used in Canada in colonial times. For the most part, as we have seen, the early colonists used hewn timbers, boards, and shingles or, in Quebec, stone. Any logs which they employed were commonly set upright, stockade fashion, and were chiefly for purposes of defense. The idea

of building a house with logs laid horizontally upon each other was brought to America from Sweden by immigrants from that country who settled in Delaware in 1638.

Colonial building was largely over, or had reached its aristocratic Georgian phase, before the principle of the log cabin type of structure became generally diffused through North America. But although the main centres of the east were then prosperously settled, two-thirds of the continent were still a wilderness. As the nineteenth century pioneers moved gradually westward, or spread from older centres to the surrounding bush, they tended to erect log cabins as their first homes.

Thus was the log cabin contemporaneous with the revivals and the Victorian house, though vastly different from them in spirit. Ignorant of the past, limited to the materials provided by nature on the site, the pioneer strove only to provide maximum shelter and comfort with the means available to him. As a result, the log cabin kept alive during the Victorian period a slender link between the early functionalism of colonial Gothic and the subsequent functionalism that was to emerge with the dawn of the modern era.

THE MODERN PERIOD

The inability of eclectic architecture to meet the needs of modern life was becoming evident to advanced thinkers in various parts of the world during the later nineteenth century. One of the forerunners of the next development in architecture was the American, Louis Sullivan, whose dictum, "Form follows function", has become a slogan of the modern movement. With the progress of the twentieth century, the need for architectural reforms has become apparent to an increasing number of architects and to the architecturally informed portion of the public. In consequence, the evolving modern style is returning to sounder principles—the same sound principles which have always formed the basis of fine architecture in the past. Surface imitations of historic styles are being stripped away and fundamental structural forms revealed. The principle is

once more recognized that those forms must be created by an intelligent effort to use existing materials in whatever way will serve the needs of contemporary life most fully.

It would be overstating the facts to imply that the modern style is already dominant in Canadian architecture. As compared with various European and South American countries, Canada has been slow to accept contemporary architectural developments. The influence of her Victorian background still remains strong. Whole suburbs have recently been built, and will probably continue to be built, in which mediaeval half-timbering is imitated by nailing superfluous boards on the housefronts. All too often the romantic appeal of these pseudo-Gothic facades ensnares purchasers before they have time to realize that in many cases the houses lack the essentials of effective planning and sound constructions.

Nevertheless, in Canada as elsewhere, the logic of present-day functionalism is gradually asserting itself. As in most countries, its first manifestations were in the sphere of engineering, where there was a straightforward effort to meet contemporary needs as simply and fully as possible. The imposing grain elevators in various parts of the country are among the pioneer forms of Canada's modern architecture. Worthy successors in trim, clean-cut functional form are many of our newer factories and power plants, among others the Aluminum Corporation factory at Kingston, Ontario, and the gigantic hydro-electric plant at Shipshaw, Quebec. Recently constructed highways and bridges also indicate the power of modern man to design things which are beautiful in their fitness to serve him.

Gradually the consciousness is growing that the functional concepts of engineering could equally well be applied to homes and public buildings; and that if so applied they would not only make our buildings more livable, but would give them a new integrity which is the first foundation of style, and a new unity among buildings, which is basic to harmonious community design.



THE MODERN PERIOD

Exterior of No. 2 Power House, Hydro-Electric plant, Shipshaw, Que.
—Courtesy J. C. Meadowcroft

Façade of Bank of Canada, Wellington Street, Ottawa.
—National Film Board



Central Station, Montreal.

—C.N.R. photo

Some of the possibilities for more economical and more enjoyable living offered by modern domestic architecture are indicated by a recently built Toronto house. The south wall is largely of glass, permitting hourly enjoyment of the changing beauties of nature—a valuable antidote for the strain of modern high-pressure living. The relation of the glass wall to the overhanging eaves has been worked out on the “solar” principle developed in the United States by George Fred Keck. The projection of the eaves, calculated with the assistance of the Canadian Meteorological Service, is such that the low-lying winter sun will flood the interior with warmth and light, whereas in summer, when the sun is higher in the sky, the eaves provide shade and prevent direct sunlight from entering. The amount of sun heat provided by this system during the colder seasons is so great that during the entire month of April last year the gas furnace operated only three hours. The resultant saving in fuel bills is obvious.

Triple-sealed glazing, specially designed for cold climates like that of Canada, is used in all the windows of this house, retaining interior heat and resisting exterior

cold. Other modern features are air conditioning and “radiant heating”; the latter, a system by which heat pipes are imbedded in the floor, providing a softer and more even distribution of heat than can be obtained from registers or radiators. Some of the heat pipes have been extended under the driveway, where they can be used to melt snow and make snow-shovelling unnecessary.

Among the recent public buildings, a restrained contemporary accent shows itself in the Bank of Canada building, Ottawa, and the Memorial Library and Art Museum in London. More pronounced modernism is evident in the Toronto Stock Exchange, the University of Montreal, the Central Station, Montreal, and the City Hall in Vancouver. Temporary war constructions, strictly functional for reasons of speed and economy, have given impetus to the modern movement. So also have the popular magazines with their illustrated articles on the “home of the future”. The era of imitative architecture, although it lingers, is undoubtedly on the decline and the future seems destined to produce a rational twentieth century style dedicated to the service of life in Canada as modern Canadians want to live it.

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LIST OF SOME OF THE PRINCIPAL PUBLICATIONS
ON CANADIAN ARCHITECTURE

Ramsay Traquair, *The Old Architecture of Quebec*: a study of the buildings erected in New France from the earliest explorers to the middle of the nineteenth century. 180 full page plates. Macmillan Co. of Canada. Publication expected 1947.

Ramsay Traquair and others, *McGill University Publications, Art and Architecture*; Series 13, Nos. 1-37.

P. G. Roy, *The Old Churches of the Province of Quebec* (1925) and *Old Houses and Manors* (1927). Historic Monuments Commission, Quebec.

Eric R. Arthur, *Small Houses of the Late Eighteenth and Early Nineteenth Century in Ontario* (1932) and *The Early Buildings of Ontario* (1938). University of Toronto Press.

William Inglis Morse, *The Land of New Adventure*. (The Georgian epoch in Nova Scotia.) Bernard Quaritch, London, 1932.

Gerard Morisset, *l'Architecture en Nouvelle-France*. Pre-publication announcement indicates 132 illustrations on 96 plates. Publication expected 1947.

Booklets issued by the National Parks Bureau, Ottawa, particularly the following: *The Port Royal Habitation*,

Lower Granville, Nova Scotia; Guide to Fort Lennox, Ile aux Noix, Quebec; Fort Anne National Park, Nova Scotia; Guide to Fort Wellington and Vicinity, Prescott, Ontario; Guide to Fort Chambly, Chambly, Quebec.

Journal of the Royal Architectural Institute of Canada, 1923 to date.

Occasional articles in the Former *Maritime Art* and its successor, *Canadian Art*.

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Acknowledgments. A number of authorities have kindly lent their assistance in connection with the present article. Concerning early French Canadian architecture, the author wishes particularly to acknowledge the information secured from Professor Ramsay Traquair and from Mr. Gerard Morisset, Director of the Inventory of Works of Art of the Province of Quebec. Dr. J. C. Webster has provided valuable material concerning Acadian architecture in the Maritime Provinces, and Mr. Ronald Peck concerning certain early buildings in Nova Scotia. Thanks should also be extended to Mr. J. C. Meadowcroft and all who assisted the author and the editors in procuring illustrations.



Britain's Trees and Forests

by J. D. U. WARD

Old fashioned type of forest. Beech, neglected and ill-grown, though pleasing to a non-forester's eye

IN MOST PARTS OF BRITAIN an observer sees a countryside rich in trees and with plenty of woodlands. Why, then, is the government proposing to increase the annual expenditure on state forestry from some £700,000 to about £4,000,000? The answer is that, before the war, Britain was producing only 5 per cent of her timber needs; her forests were for the most part neglected and mismanaged and they in fact occupied only 5.5 per cent of the country's land area—a proportion that may be compared with the 19 and 27 per cent for the forest areas of France and Germany respectively.

In short, the well-wooded look of the countryside is an illusion, of which there is an interesting explanation. Great Britain is perhaps the chief pedigree stock farm in the world, and has also a strong tradition of field sports, especially of shooting and fox-hunting. The countryside's well-wooded appearance derives largely from the many big trees left in the hedgerows to give shade and shelter to the livestock, and from the countless small woods, from quarter of an acre to ten acres in area, which are valued not as forest for timber production but as coverts for foxes and pheasants.

This latter use of woods is a survival from much earlier times. Of old, the word "forest" was associated less with timber production than with sport, for the forests were the lands reserved specially for the king's hunting. To this day the words "deer forest" mean a tract of country which is mostly bare, only small parts being wooded, and even in southern England there are the Forests of Dartmoor and Exmoor, both of which have far more open, heather-clad spaces than woodland. But there were also in the ancient forests large areas of true woodland, where the dominant trees were usually oak or beech; only in Scotland were there noteworthy forests of Scots pine, Britain's one conifer or softwood tree of importance.

Many of Britain's smaller woodlands (and a few of the larger also) retain their original character: oak and beech and occasionally ash predominate. In certain areas—on the Kent and Sussex and Hampshire clays, for example—England has grown some of the finest oak timber in the world, and the beechwoods on some of the chalk downs (the Chiltern Hills, for instance) are superbly beautiful, especially in spring and autumn.

But though there is always a sale for the best oak and beech, Britain needs only 6 per cent of these and other hardwoods, compared with 94 per cent of softwoods or conifer timbers, which are specially required for pitprops and similar purposes in the mines, as well as for innumerable other industrial uses. This is the chief reason why Britain's foresters have in the last twenty-five years planted conifers far more than the customary broad-leaved trees. Other reasons are that conifers will grow well on much poorer soils—where oak would die—and that they grow much more quickly than most broad-leaved trees. An authority* wrote a few months ago:

We now have standing in Great Britain two Douglas firs, one in the Earl of Powis' Park at Welshpool, which is the tallest tree in our island, another growing at Walecot in Shropshire which must contain nearly 1,000 cubic feet of timber; both these trees are approximately 100 years old, yet it takes a fine oak tree to come to this volume of timber 500 years. We have young stands of *Abies grandis* and *Tsuga heterophylla* in Scotland, far heavier for their age than any other

stands of trees we have previously grown; we have at Leighton in Montgomery a stand of *Sequoia* (redwood) which is probably the heaviest stand of any tree in the country, yet it is well under 100 years of age.

When forestry in Britain is being considered, a distinction should be made between England and Wales on the one hand, and Scotland on the other. England, though a country of so many traditions, has at present no tradition of forestry, and this lack in a country where tradition means so much, aggravates the foresters' difficulties. The large-scale planting of conifers is a suspect policy. The lay public, knowing nothing of forestry and ignorant of timber needs, are fearful that the familiar aspect of the countryside will be completely altered, and that England's rural beauty will be lost. The prejudice against conifers has been expressed in some queer ways. Though England has adopted the Christmas tree custom from Germany, and the Norway spruce is accordingly loved as an individual tree, one critic denounces "stark rows of Christmas trees . . . the impudent symmetry of the young spruce, the formalism of the mature spruce . . . rigid and monotonous ranks of spruce, dark green to blackish, goose-stepping on the fellsides".

There have even been amusing depreciations of "alien trees", the critics forgetting that it was only an accident of natural history that prevented Britain from having fine spruce forests of her own, and that some of the North American trees now being planted there were indigenous before the Ice Age. But this level of controversy is in truth too childish to merit much attention; not even the most insular of Englishmen seriously suggests that potatoes and onions, or peaches and walnuts should be banished because they are "alien". And foresters know well that the list of Britain's native timber trees is short and lacking in variety. Such trees as the Corsican and maritime pines, the Norway spruce and the larch, all from Europe, and Sitka spruce, Douglas fir and western red cedar from North America are genuine and much-needed enrichments of British forests.

It is, however, only fair to stress once

*C. P. Ackers



again that Scotland is different from England and Wales in these matters, for Scotland had some good natural pine forests. In addition there was much afforestation in the eighteenth and early nineteenth centuries, when one landowner alone (the Duke of Atholl, known as "the planting duke") was said to have planted over fourteen million European larches between 1764 and 1826. As a result, there is in Scotland far more forest-sense than in England, and even some tradition of forestry.

The Forestry Commission, which operates throughout the United Kingdom, hopes to plant sufficient trees during the next fifty years to provide the country with a total of five million acres of effective forest: this would change the proportion of forest area from the present 5.5 per cent to about 9

Top left:—Forty-year-old Japanese larch in winter.

*Left:—Sitka spruce (*Picea sitchensis*) with mixture of a few western red cedars (*Thuja plicata*).*

Above:—Silver birch left to nurse newly planted beech in Micheldever Forest.

per cent, which would mean that Britain would then be just half as densely wooded as France now is. So modest a program is not likely to change the face of the countryside, and suggestions that England's rural beauty is being ruined by the planting of more coniferous trees need not be considered very seriously in these times, when the planning of forests is improving greatly.

Between the years 1920 and 1930 there was some unsightly forest planning, rigidly straight fence-lines being drawn (for economic reasons) where the natural broken lines of the mountains should have been followed, and sharp-angled compartments being made where the slopes of the hills demanded curves. Also, the planting of large blocks of trees of the same species and same age has been found to have definite drawbacks in connection with pests and diseases. The truth is that the countryside of Britain, and British soils, are too varied for large-scale afforestation on a hard and fast plan. Therefore the character of the landscape and the nature of the soils are being followed more

closely. A passage from a paper by Arthur Geddes published in August 1944 (in "The Scottish Forestry Journal") well illustrates the prevailing practice:

Afforestation at the government forest of Inverliever, Loch Awe-side, Argyll, shows how in the last twenty years, planting based upon close botanical survey of the flora has led to "landscape gardening" which could hardly have been equalled by deliberate design . . . Briefly, it (the method) consisted in noting the main "plant communities and associations" (such as natural oak groves, rushes with certain grasses, mixed heaths and grasses, or heath alone), and planting on the patch mainly covered with one such "community" the kind of tree which, as experience showed, grew best where that "association" had been found.

. . . After a preliminary survey the head forester with his foreman staked out the area; a rough calculation of the number of trees that would be required followed, and the foreman supervised the actual planting. Thus little areas were formed, each naturally suited to be the habitat of some species of forest tree. These tree groups, though parts of one forest and of one forest plan, also revealed, in a new way, the forms and character of the landscape underlying the forest floor, where rectangular blocks, so practical-seeming on paper, would have given very variable growth on the ground. Whether one viewed the hill slopes across the loch, from a distance, or saw them as one walked through the forest, the picturesqueness of this genuinely scientific planting was remarkable . . .

But what practical good should result from more forests in Britain? Certainly the

Left:—Scots pine, planted in 1922 by the Forestry Commission, in Rendlesham Forest, Suffolk. Note good rate of growth, shown by space between whorls.

Below:—Girls working with a portable saw in Rendlesham Forest, where 40 such saws were in operation at one time. The Scots pine yields pitprops, stakes and firewood.





Left:—A forest nursery. In background a 40-year-old stand of larch. In foreground 3-year beech heeled up and others in transplant lines, with plots of 2-year Sitka spruce seedlings. Between, beds sown with over 130 lb. of beechmast, all beds save three being protected with wire netting against pigeons. To left a small number of Thuja plicata seedlings heeled up.

Below:—The Forest of Mynydd Ddu in Wales. Brecknockshire to left and Monmouthshire to right.

island is unlikely ever to be self-sufficient in timber. But it is thought that, when the target total of five million acres of forest is realized, Britain's trees will supply one-third of the country's timber needs and, further, will contain, in standing timber, a sufficient reserve to supply the whole of the country's requirements during any three years of emergency. Also, more well-grown trees should mean more woodland industries, better employment, and the exercise of more skilled and semi-skilled craftsmanship. Hitherto, Britain's extreme poverty in well



managed woodlands—that is, forest areas managed for timber and other forest products and not merely for sport—has meant that her rural economy has been badly balanced, because of the weakness of the woodland industries.

It is unlikely that forests (at any rate on the small British scale) would make any

A forester's house at Mynydd Ddu, with the forest nursery in foreground.

Right:—A Mynydd Ddu forest worker's holding.

Below:—Mountains and forest, showing Moel Hebog from Beddgelert Forest, Caernarvonshire, Wales.



refuges—places of peace and quiet for Man in a world that grows ever more noisy and less restful, and sanctuaries for certain animals, such as red squirrels and pine martens, which have tended to decline as the human population and suburban areas have increased. They will, moreover, appeal to the popular taste for camping and wild woodland country, for which the Forestry Commission caters in its National Forest



difference in the actual rainfall, but large numbers of trees certainly help to preserve the moisture in the soil, and there can be no doubt about their value as filtering and purifying agents in areas where large quantities of water have to be caught for the reservoirs supplying great cities. The new forests should also be valuable as

Minor forest produce. Oak standards with hazel coppice, the coppice just cleared (after 7 years) for peasticks, beanrods and stakes, as shown.





Parks, several more of which are to be established in the immediate post-war years.

There is, in conclusion, an aspect of the forests being planted or planned in Britain today which seems to merit special mention, lest it should be overlooked because of its obviousness! Though large communal or state forests are numerous in most Continental countries, they have in modern times been very few and far between in Britain. Most of Britain's woodlands have been (and still are) privately owned. But the

forests established since 1919 have nearly all been planted and managed by the state, and it is the state which plans to give Britain more and larger woodlands in the future. Britain's new forests belong, then, to the people, and it is to be hoped that the people, being now the owners of the largest woodland property under one management in the country, may come to take an interest in their forests and to acquire some forest sense. We may, in fact, be watching the birth of a new tradition in a country of traditions.



Top left:—Thuja plicata planted in 1907 and photographed in 1944.

Top right:—Sequoia gigantea from California, planted in 1911.

Harvesting thinnings from a young (23-year-old) forest of Scots pine.

Lawren Harris

by ROBERT AYRE

WHEN YOU LOOK at the pure abstractions Lawren Harris has been painting for the past ten or twelve years, or even at his Arctic landscapes, with their immaculate glaciers and ice floes, or at his famous *North Shore, Lake Superior*, painted twenty years ago, you may find it hard to realize that he began with bleary-eyed houses hiding in the sooty smoke of the Toronto slums. But if you look at some of those early paintings, and read his little book of verse, *Contrasts*, published in 1922, you will discover that there is no inconsistency. In his earliest works you will find the elements of his latest.

Lawren Harris, born in Brantford in 1885, and always blessed with independent means, came to the slums as an outsider. He was excited by the teeming life of the city; like Baudelaire, he bathed in multitudes; he felt a kinship with humankind. "People," he said, "are all right." But he came with an innate fastidiousness and an intense love of order and of light. He looked beyond the gloom and misery and he passes on to us what he found with all the force of revelation. In one of his poems he describes a house as ugly as "a sickly sin in a callous soul"; but the street door between dirty sagging shutters laughed when the hazy sunlight struck it, because someone had painted it red. A flat-breasted girl gazes wistfully out of a tea room window at the billowing white clouds. On a street corner "a guy shouts Christ at the crowd". A lineman sings atop a telephone pole. If the fog would lift but for a moment, he says:

"This seething fog, weighted with prejudice, dense with the close-packed particles of selfishness, crowding vision into blindness,

We should see some strange sights, some wonderful sights . . ."

He is looking for ethereal music—surging, cleansing, "leaving the soul transparent, full receptive to all radiance . . ." Now and then, he says, "some lover of light, with living vision, pierces a way . . ."

But it is not as a poet that we know Lawren Harris. He began drawing and painting as a child; he was taken out of the University of Toronto because he went on drawing instead of attending to classes and was sent to Europe to study art. After a

trip to Arabia with Norman Duncan, the Canadian novelist, to illustrate a series of articles on the Near East which Duncan was writing for *Harper's*, he settled down in Toronto. Gradually he began to discover the North. "All of us," he says (and he means Tom Thomson and the original Group of Seven), "were obsessed with the idea of an art expressive of our land." Harris painted Algoma, Georgian Bay, Lake Simcoe, Algonquin Park, the north shore of Lake Superior, went to the Rocky Mountains, and made a long voyage to the Arctic with A. Y. Jackson. Between 1934 and 1940, he was in the United States painting abstractions in New England and New Mexico and when he returned to Canada it was to Vancouver.

His works hang in the National Gallery, in the public galleries of Montreal, Toronto and London, in Hart House, Toronto, in the Detroit Museum of Art and in many private collections. He was awarded gold medals at the Pan-American Exhibition, Baltimore, and the Philadelphia Sesquicentennial Exposition. The University of British Columbia recently honoured him with the degree of LL.D. In his painting, he may dwell apart in an ivory tower, but he knows where the door is; he is a sociable being, and he emerges to take his part in the life of the community; as national president of the Federation of Canadian Artists and in other capacities, private as well as official, he gives much of his electrical vitality to improving the standing of art in Canada.

The painting of Lawren Harris, however, is a thing apart. He had much to say in his verse about humanity both individually and in the mass, but you will seldom find a human figure in any of his pictures. Even when he was painting the slums he was tending to the abstract. He painted houses and snow in the gutters. But what interested him was form and light. When he came to the landscape of the North, he formalized; the mountains, the icebergs, the stark tree trunks, were but symbols of what was to him the greater reality. To Lawren Harris, the lover of light, searching for the cleansing music, keeping his soul "transparent, full receptive to all radiance", the development to pure abstraction was inevitable.



PICAO into ICAO—

International Civil Aviation Organization

by FREDERIC EDGE

EARLY IN 1944 Canada issued a White Paper advocating the creation of an international air transport body and Great Britain followed suit shortly after with a White Paper of her own. An Empire Air Conference was then held in Montreal and this led to the Chicago Civil Aviation Conference in 1944, attended by delegations from fifty-two nations, comprised of the United Nations, the associated nations who

had broken relations with the Axis, and European and Asiatic neutral countries. The urgent need for an international air governing body was recognized in the Interim Agreement by which PICAO (the Provisional International Civil Aviation Organization) was established.

The International Civil Aviation Organization (ICAO), successor to PICAO, came into being in April, 1947, the First Assembly

At top:—The B-36, a six-engine transport with accommodation for 200 passengers, which may be expected on passenger lines before long.

Courtesy Consolidated Vultee Aircraft Corp.

of the permanent organization being held in Montreal in May. Twenty-eight countries* had deposited instruments of ratification or adherence to the Convention on International Civil Aviation drawn up at the Chicago Conference in December, 1944, and, at the time of writing, it was understood that six other countries had completed ratification procedure though their documents had not then been deposited in Washington.

Montreal was selected as permanent seat of the Organization by secret ballot of the member States of ICAO's provisional embryo in June, 1946.

The purpose of ICAO, which parallels that of its interim predecessor, is to promote the development of all aspects of international civil aeronautics. As a means to this end it will attempt to establish rules and regulations for international observance of the five freedoms of the air and to establish a multilateral system advocating that certain basic privileges be granted by all adhering states to all others. ICAO intends to make international air travel a safe proposition for the globe-trotter of tomorrow. ICAO standards and recommended practices aimed at achieving safety and uniformity in international air operations have been drawn up for airports, air routes and navigation aids, rules of the air and air traffic control, meteorology, communications systems, search and rescue, maps and charts, personnel licensing, operational procedures and airworthiness.

Although PICAO was the first organization to embrace world aviation problems as a global guardian, its primary motives were as old as intercontinental commercial aviation itself.

International civil air transportation began in 1919, when scheduled flights were established linking London, Paris and Copenhagen and between France and Morocco. In the same year transoceanic flight became a long-heralded reality when a non-stop flight was made from Newfoundland to Ireland by two British airmen and two successful Atlantic crossings were made by aircraft of the United States, which flew in stages via the Azores and Lisbon from the

American mainland to the United Kingdom.

Shortly afterwards, the Paris Aviation Congress of 1919 was held in recognition of the necessity for regulation of international commercial aviation. The Congress succeeded in drafting the Paris Convention which subsequently established an organization known as the International Commission for Air Navigation, with an adherence of thirty nations, which is yet in existence. Unfortunately the international effectiveness of the Organization was crippled by the withheld support of the United States, China and Russia, all economically and geographically important in global commercial aviation.

During the next fifteen years the main development of international air service was in the European continent, where short international distances were within range of the aircraft of the period. However, in the thirties, the K.L.M., Royal Dutch Airlines, were operating flights to the Dutch colonies in the East Indies; Air France to Indo China, Dakar in South Africa and later across the south Atlantic at its narrowest point to Brazil; British Imperial Airways across Asia and Africa; and Deutsche Atlantic to Brazil and the Argentine.

The United States inaugurated scheduled American air travel in 1927 with the formation of Pan American Airways, which was originally intended to operate air routes across the Caribbean but whose flights eventually descended the coasts of South America and were later extended to include China, Portugal and Australia. The necessity, arising from the Caribbean air services, for international co-operation on air transport matters in the Western Hemisphere led to the Pan American Convention on Air Navigation in Havana, Cuba, in 1928. The Convention, which was ratified by the United States and nine other American republics, had freedom of air passage among its principles, but unlike the Paris Conference allowed for neither the establishment of uniform technical standards nor the periodic discussion of common problems through the agency of a permanent organization.

Shortly after the outbreak of World War

*Argentina, Australia, Brazil, Canada, Chile, China, Czechoslovakia, Denmark, Dominican Republic, Ethiopia, India, Ireland, Liberia, Mexico, New Zealand, Nicaragua, Paraguay, Peru, Philippines, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, Union of South Africa, the United Kingdom, the United States of America.



PICAO OFFICIALS

Front row, left to right:—Dr. Edward Warner (U.S.), President of the Interim Council; Dr. Albert Roper (France), Secretary-General. Top row, left to right:—Dr. F. H. Copes Van Hasselt (Netherlands), 1st Vice-President of Council; Colonel C. Y. Liu (China), 2nd Vice-President of Council; Mr. Guillermo E. Suarez (Colombia), 3rd Vice-President of Council.

Courtesy PICAO

II the Royal Air Force Transport Command was making flights to battlefronts throughout the entire world. By 1940 Ferry Command flights from the North American continent to the United Kingdom were encountering winter weather over the north Atlantic and navigational and flying aids were rapidly developed and auxiliary airfields built. Twenty-seven thousand aircraft were ferried from North America to the war theatres. In one month alone Transport Command flew an aggregate of nearly five million miles, carrying over twenty-one thousand passengers and twenty-three thousand tons of freight.

The wartime international air network

broadened considerably with the declaration of war on Germany and Japan by the United States. The United States Army and Navy Air Transport Commands blazed air trails and built airfields all over the world. At their operational peak the combined American Military Transport Commands' routes alone covered two hundred thousand miles, with two thousand eight hundred aircraft flying six hundred million passenger miles each month. The wartime international air services, which flew as close to schedule as circumstances permitted, contributed inestimably to the successful cessation of hostilities and to the advancement of post-war commercial aviation.

The two figures who stand out predominantly in the PICAO picture are Dr. Edward Warner, Council President and an authority on the economic and technical aspects of transport aviation, and Dr. Albert Roper, Secretary-General. Dr. Warner was formerly Vice-Chairman of the United States Civil Aeronautics Board and Dr. Roper was Secretary-General of the International Commission for Air Navigation (ICAN).

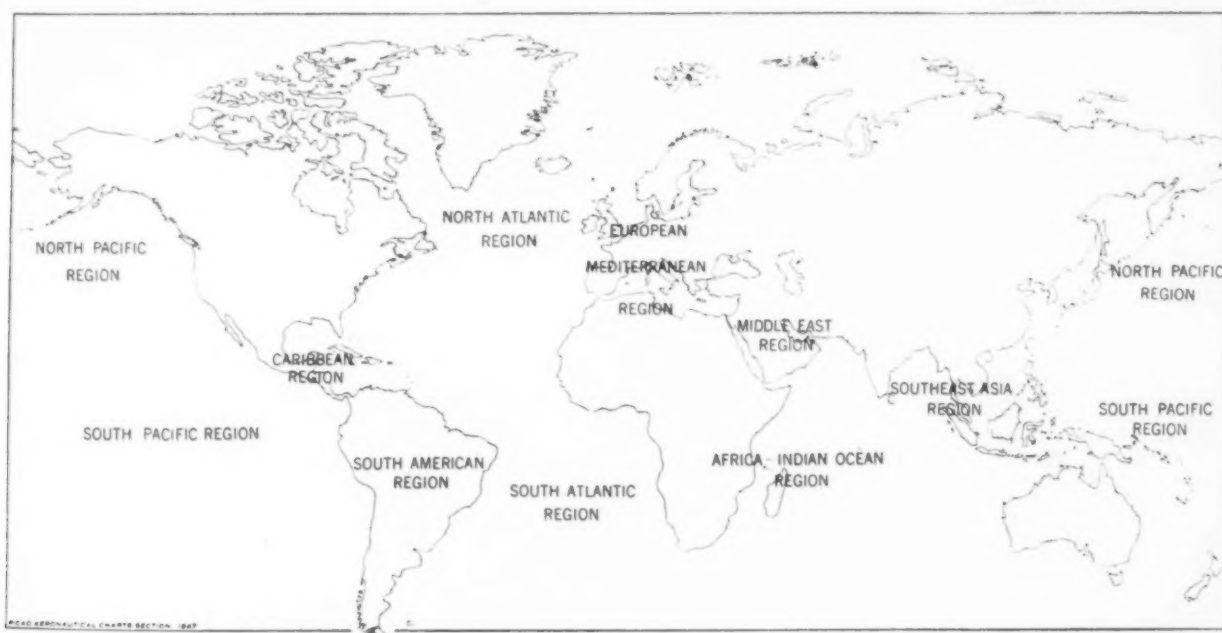
The PICAO government was made up of an Interim Assembly and a biennially elected Interim Council. ICAO is similarly organized, with a permanent Assembly and a Council elected every three years. The Assembly convenes annually and is comprised of delegates from the member states, each of which is entitled to one vote. The decision on any controversial matter is made by a simple majority of ballots cast by the members present. Delegates may be assisted by technical advisers who can participate in the meetings but are not entitled to vote. At its discretion the Assembly may refer to the Council any specific matter for its consideration and report. The Assembly is responsible for the annual budget and determines the financial arrangements and commitments of

the Organization. It may deal with any matter within the sphere of action of the Organization not specifically assigned to the Council, and establish such subsidiary commissions and committees as it may deem necessary or advisable for the furtherance of its work.

The Council consists of twenty-one members elected by the Assembly. In electing the members of the Council the Assembly is required to give adequate representation (1) to those member States of chief importance in air transport, (2) to those member States not otherwise included which make the greatest contribution to the provision of facilities for international civil air navigation, and (3) to those member States not otherwise represented whose election will ensure that all the major geographical areas of the world are represented. Among other duties the Council is charged with providing for the establishment of any subsidiary working groups which it may consider desirable. ICAO is purely advisory in capacity and has no power whatsoever to enforce its standards or decisions upon members. The signatory nations, however, have agreed to accept recommended practices as goals to-

Map showing the world regional air navigation areas plotted by PICAO

Courtesy PICAO



meetings are to determine what air navigation facilities and services are available and what are required for international civil air transport within each region; to develop regional operating procedures for aircrew and ground personnel and to recommend arrangements for the collection and dissemination of data relevant to local air navigation requirements.

Some eleven technical subdivisions were created by PICAO's two basic committees. These comprise a group of one hundred and sixty carefully chosen individuals of sixteen nationalities. They represent the highest skills available in many fields of civil aviation, and are now salaried members of ICAO working as a team to serve the Council, its committees and its divisions.

In the past year, PICAO's accomplishments in the field of international accord and co-operative action have been outstanding. Of its achievements the most important is the Multilateral Air Agreement, to be presented at this summer's Assembly, which will embody ICAO's concrete solutions for all types of administrative, technical and

political snarls. In addition to this overall blueprint for world aviation the Organization has made notable progress towards solving several of the more specific problems of international air travel.

The International Air Transport Agreement formulated by PICAO consists of what are known as "the five freedoms of the air", by which each contracting State would grant to air services of the other contracting States (1) the privilege to fly across its territory without landing; (2) the privilege to land for non-traffic purposes; (3) the privilege to put down passengers, mail and cargo taken on in the territory of the State whose nationality the aircraft possesses; (4) the privilege to take on passengers, mail and cargo destined for the territory of the State whose nationality the aircraft possesses; and (5) the privilege to take on passengers, mail and cargo destined for the territory of any other contracting State and the privilege to put down passengers, mail and cargo coming from any such territory.

The first two of the five freedoms form a separate Transit Agreement which has al-

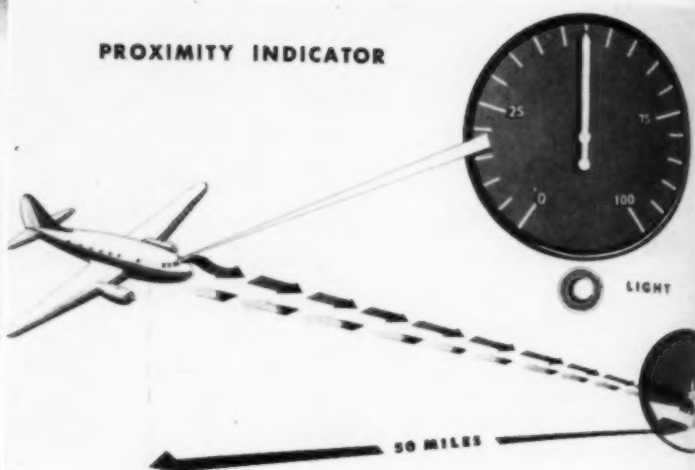
Type of ship operating the North Atlantic weather stations.

Courtesy U.S. Coast Guard





PROXIMITY INDICATOR



Above:—Diagram of basic principle of distance measuring equipment. Used in conjunction with directional equipment, pilot can ascertain his exact position.

Courtesy Canadian Air Cadet

Left:—Rotating radar antenna on 60-foot tower for use in air traffic control.

ready been fairly generally accepted. The third and fourth freedoms, which cover the right to carry passengers and freight of the home state of the aircraft to and from the territories of other countries have, in many countries, been granted bilaterally but not multilaterally. The most controversial freedom is the fifth, which would permit an aircraft in transit from one country to another to land in an intermediate territory and pick up passengers and freight for foreign delivery. In effect, if this measure were adopted it would enable an American aircraft en route from La Guardia airfield in New York to land at Dorval Airport in Montreal and pick up Canadian passengers bound for the British Isles. "Cabotage" (sometimes called the sixth freedom though it is not part of the Air Transport Agreement), which would enable aircraft of one country to pick up and deliver passengers and freight in another country, is regarded rather as an inherent right of a State to carry its own domestic traffic, than as a "freedom". Although these controversial freedoms have long been accorded to sea transport throughout the world, the rapid development of air travel and the degree of industrial organization

required to maintain it have made some of the member States hesitant to face the competition which they feel the multilateral exercise of such privileges would entail.

PICAO has established thirteen north Atlantic weather stations whose ships will sail under at least six different flags and whose crews will speak a representative selection of world languages. Arrangements have been made for the United States to operate nine of the ships, the United Kingdom two, France one, Canada and the United States in conjunction one, and for Ireland and Portugal to contribute a certain sum annually towards the upkeep of the vessels. The ships, which are located as depicted on the accompanying map, will maintain their respective positions as closely as climatic conditions permit.

A special subcommittee is working to compile a universal set of aviation terms which will facilitate the interchange of technical information among the various countries. This committee also expects to clear up the controversy between the relative merits of the metric and imperial systems of measurement. Standard units have already been recommended for the measurements

used in communications between aircraft in flight and ground stations.

ICAO is putting forth a series of proposals to take much of the red tape out of inter-continental air travel. A simplified standard form to be filled out by international air travellers has been drawn up and recommendations have been made to obviate the innumerable documents which pilots have hitherto been forced to sign on familiar routes for their aircraft, cargo and passengers.

Probably ICAO's most important contribution to safe international air passage is sponsorship of world-wide installation of the finest obtainable radar and radio aids to navigation. Proposed standard systems and equipment for immediate installation, which include systems for instrument landing, cross-country and transoceanic guidance, have already been agreed upon. The multifarious problems of handling congested air traffic will be accorded constant study until a practical solution is proposed. Teleran, a device combining the principles of both radar and television, may prove to be the key to air traffic control.

It is considered likely that ICAO's permanent Montreal quarters will be adjacent to the new Central Station. The station, which was originally designed as a semi-skyscraper, has never been completed and the resumption of work on the original plans would provide adequate and satisfactory offices not

only for the permanent Secretariat and Council but also for the meetings of the Assembly itself. Installation of a helicopter shuttle-service would provide quick and safe transportation for the delegates between Dorval airport and the ICAO offices.

Under the experienced leadership of its governmental heads ICAO is maintaining close liaison with other related international organizations. The functions of ICAN, which did for Europe what ICAO now plans to do for the world, and of CITEJA*, an international body of lawyers concerned with the solution of air problems, are being merged with the new Organization.

The International Labour Office and the International Air Transport Association, another great international air organization, also maintain headquarters in Montreal. Although not as large as ICAO, IATA is comprised of the major operating airlines of the world and has great financial resources. It is expected that other international organizations and companies interested in following at first-hand developments in ICAO and IATA will transfer their headquarters to Montreal.

Every important land area in the world with the exception of Russia, who failed to attend the preliminary conferences because of her objection to the presence of representatives from certain neutral countries, is taking an active part in ICAO, and Canada has become the hub of an aeronautical world scheme.

*Comité International Technique d'Experts Juridiques Aériens.





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EDITOR'S NOTE-BOOK

Walter Abell is Associate Professor of Art at Michigan State College. From 1928 to 1943 he was associated with art activities in Canada, first as Professor of Art at Acadia University, and later as Educational Supervisor at the National Gallery of Canada in Ottawa. He was also the first editor of the magazine *Canadian Art*. Mr. Abell has written articles on the arts of Canada for various Canadian and United States periodicals, for the *Encyclopedia of the Arts*, and for the *Encyclopedia Americana*.

* * *

J. D. U. Ward, who lives near Oxford, is a native of southwestern England. His interests lie chiefly in rural England, where he has studied and written about the beauties of the countryside, its natural history and its old buildings. Mr. Ward has made a particular study of trees and forests and is at present preparing a book on Britain's woodlands and allied interests. Though he spent some time in Canada, working on a ranch in Alberta, Mr. Ward's articles deal primarily with the English scene and readers of the Journal are familiar with some of his accounts of the old buildings and historic features of English town and countryside. See C. G. J. for December 1945, July 1944, September 1942 and October 1938.

* * *

Robert Frederic Edge, a native of Ottawa, attended Ottawa public schools and St. Patrick's College. At the early age of nine he received his first rejection slip but has since been a contributor to various publications and for a period was on the editorial staff of the *Ottawa Citizen*. His heart is set on free-lance work, however, and since completion of the present assignment he has been in the West, the first step in a tour of the Americas, gathering material for articles and a book.

* * *

Robert Ayre—See biographical sketch in July 1946 issue.

